

**Notice of Allowability**

Application No.

10/717,986

Examiner

Quochien B Vuong

Applicant(s)

ELORANTA ET AL

Art Unit

2685

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11/20/2003.
2. ☒ The allowed claim(s) is/are 1-5.
3. ☒ The drawings filed on 20 November 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date <u>02/23/04</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment                               |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                               | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|  | 9. <input type="checkbox"/> Other _____.   |

***Reasons for Allowance***

1. Claims 1-5 are allowed over the cited prior art.
2. The following is an examiner's statement of reasons for allowance:

Regarding independent claims 1 and 5, the Applicant admitted prior art (AAPA) (figure 2) disclose a digital to RF-conversion method and device for converting a digital signal having a plurality of data bits for providing a differential output signal modulated by a carrier signal, the carrier signal provided between two carrier signal ends, wherein the differential output signal is formed with current loads and provided between two output ends, the device comprising: a plurality of conversion units connected in parallel (column 1, lines 17-27), each unit adapted to receive a control voltage indicative of a data signal value, the control voltage provided between two control voltage ends, each unit comprising a differential switch pair (figure 3, page 1, lines 28-34). And Comer (US 4,088,905) discloses a circuit for digital to analog converter comprising a first and second differential switch sections (figure 1, column 3, lines 25-68). However, the AAPA and Comer fail to teach the method and device above wherein the first differential switch section having: two input current paths, each operatively connected to a different one of the output ends; and two differential switch pairs connected to the control voltage ends for conveying in the two input current paths differential currents indicative of the data signal value; the second differential switch section having two control current paths, each operatively connected in series to a different one of the two differential switch pairs, the control current paths operatively and separately connected to different ones of the carrier signal ends, for modulating the differential currents with the carrier

Art Unit: 2685

signal; and a current source, operatively connected in series to the second differential switch section for further controlling currents in the control current paths.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Information Disclosure Statement***

3. The information disclosure statement (IDS) submitted on 02/23/2004 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Grandfield (US 5,448,772) discloses a stacked double balanced mixer circuit.

Ylamurto et al. (US 6,545,516) disclose frequency conversion.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quochien B Vuong whose telephone number is (571) 272-7902. The examiner can normally be reached on M-F 9:30-18:00.

Art Unit: 2685

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**QUOCHIE B. VUONG**  
**PRIMARY EXAMINER**

Quochien B. Vuong

Apr. 29, 2005.